COE/USFWS Workshop

December 13, 2006

Columbus, Georgia

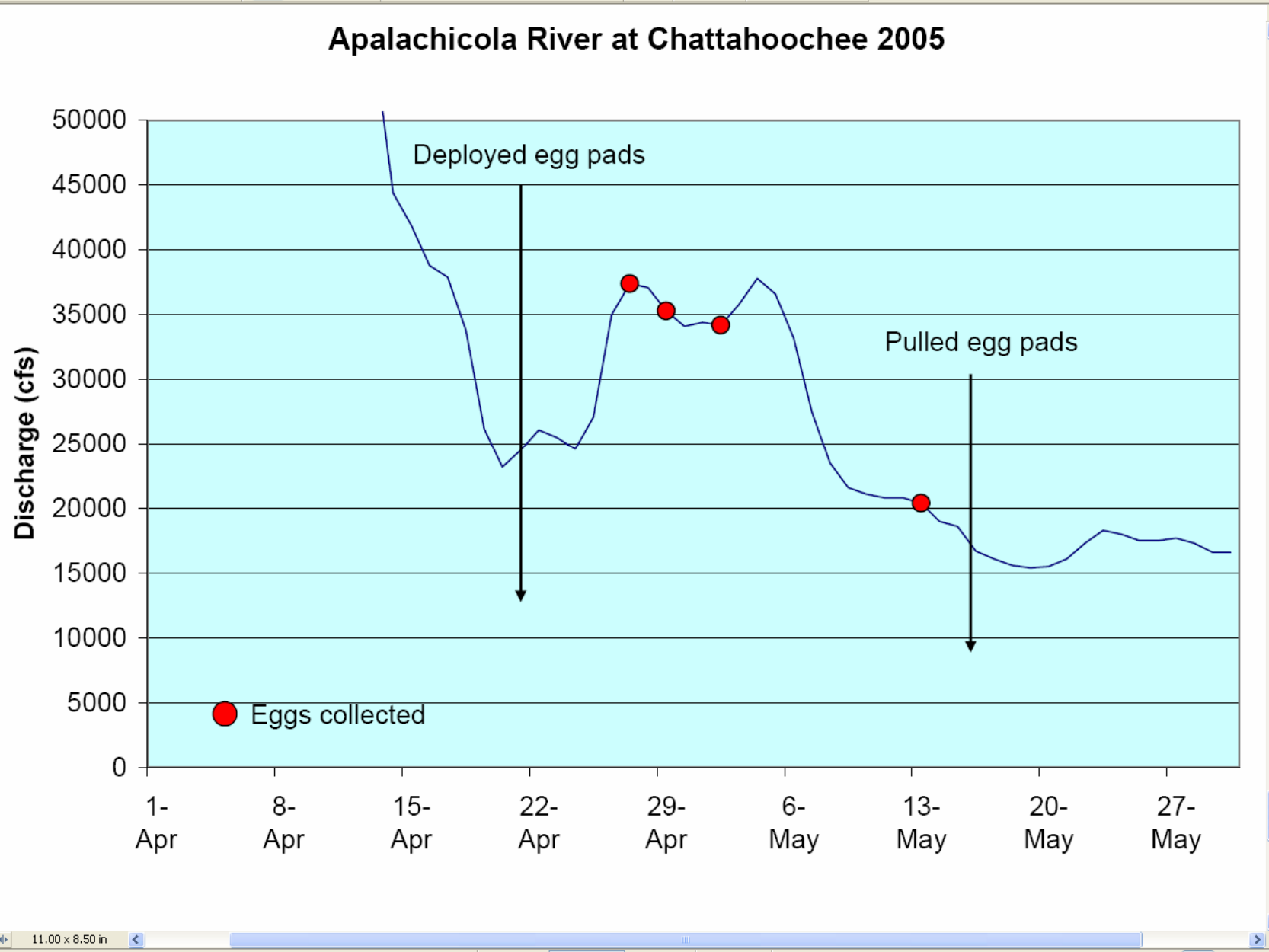
Georgia EPD

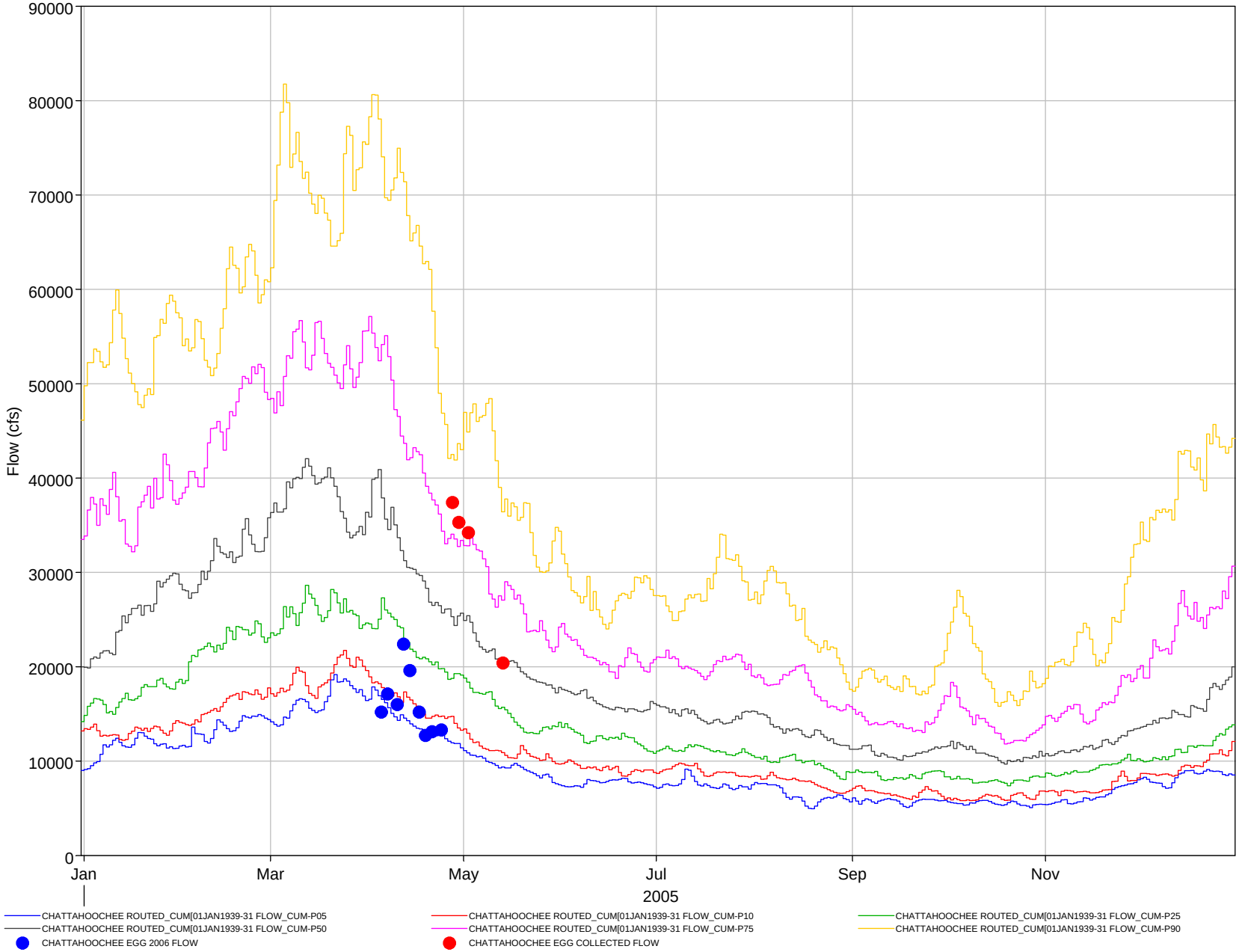
Revised 12 Jun 2006

U.S Army Corps of Engineers, Mobile District
Interim Operations at Jim Woodruff Dam
and Releases to the Apalachicola River
In Support of Listed Mussels and Gulf Sturgeon

Minimum Releases

Months	Basin Inflow (BI) (cfs)	Releases from JWLD (cfs)	Justification
March - May	>= 37,400	not less than 37,400	Max. known flow of sturgeon spawning in the Apalachicola, as documented in 2005. All of rock shoal inundated by more than 4.59 ft. Majority of floodplain aquatic habitat (61%) in which mussel fish hosts may spawn is connected to the main channel. Peak flows of this magnitude or greater have occurred in all but 5 out of 85 years of record. No evidence of adverse effects to listed species if Corps stores BI above this level in these months while observing down ramping rates.
	>= 20,400 and < 37,400	>= 70% BI; not less than 20,400	In 2005 successful sturgeon spawning was documented to occur between 20,400 cfs and 37,400 cfs. All of rock shoal habitat at NM 105 is inundated in this range, and most (>73%) innundated with > 4.59 ft (the min. reported depth of Gulf sturgeon spawning in any river). Storing up to 30% of BI (i.e., releasing >= 70% BI) in this flow range would insignificantly affect the area of the rock shoal inundated or other characteristics that may influence its suitability as spawning habitat. During normal to wet periods releases would likely equal or exceed 90% BI. During extended dry or drought periods, if composite storage is less than full, it may be prudent to release less than 90% in order to all some refill for future augmentation flows. Releases of at least 70% BI would still provide inundation of at least approximately 87% of the rock ledge habitat and access for spawning (>4.59 ft depth) would be available to approximately 60% of the rock ledge habitat at NM 105.
	< 20,400	>= BI; not less than 5,000	No discretionary action except flow augmentation and ramping rates. 5000 cfs is the minimum condition to ensure using water stored during discretionary actions in other flow ranges and time periods.




90000
80000
70000
60000
50000
40000
30000
20000
10000
0
Flow (cfs)
Jan
Mar
May
Jul
Sep
Nov
2005
CHATTAHOOCHEE ROUTED_CUM[01JAN1939-31 FLOW_CUM-P05
CHATTAHOOCHEE ROUTED_CUM[01JAN1939-31 FLOW_CUM-P10
CHATTAHOOCHEE ROUTED_CUM[01JAN1939-31 FLOW_CUM-P25
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CHATTAHOOCHEE ROUTED_CUM[01JAN1939-31 FLOW_CUM-P75
CHATTAHOOCHEE ROUTED_CUM[01JAN1939-31 FLOW_CUM-P90
CHATTAHOOCHEE EGG 2006 FLOW
CHATTAHOOCHEE EGG COLLECTED FLOW

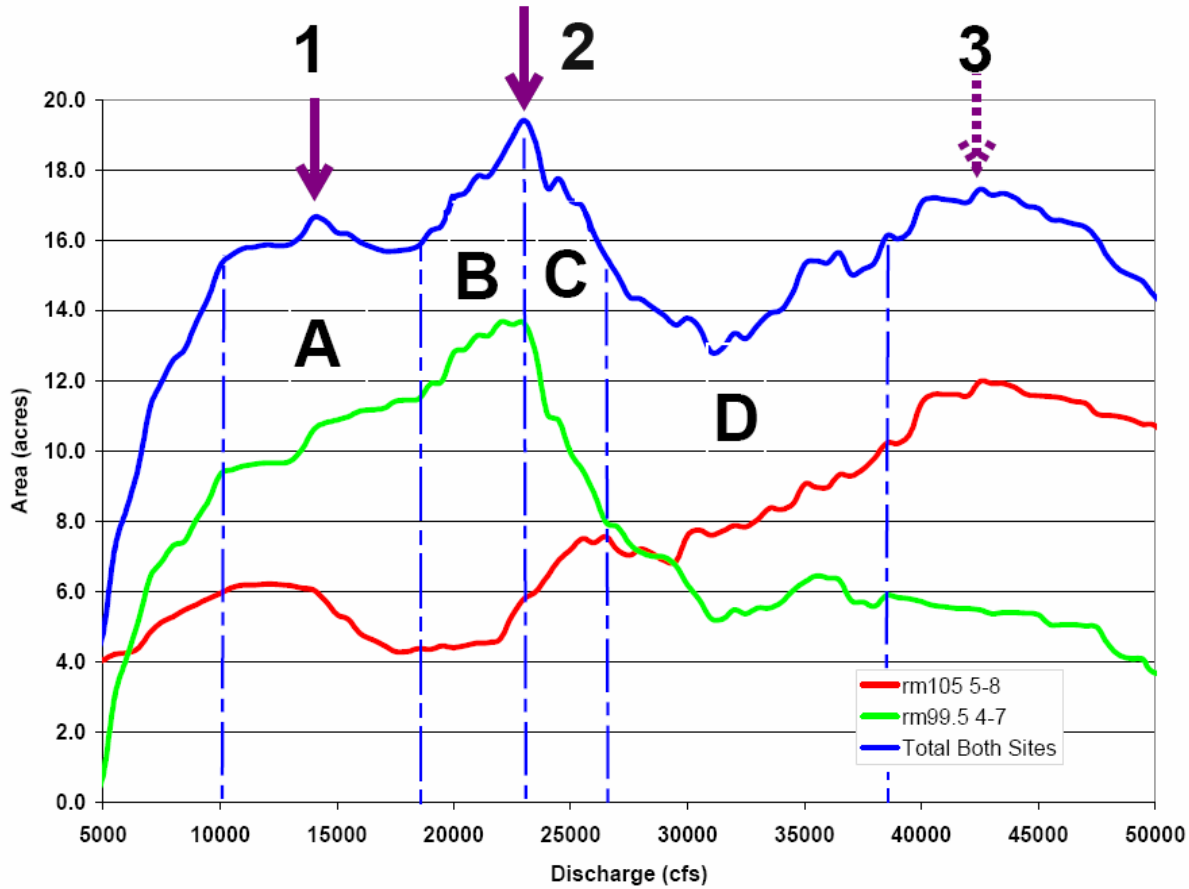
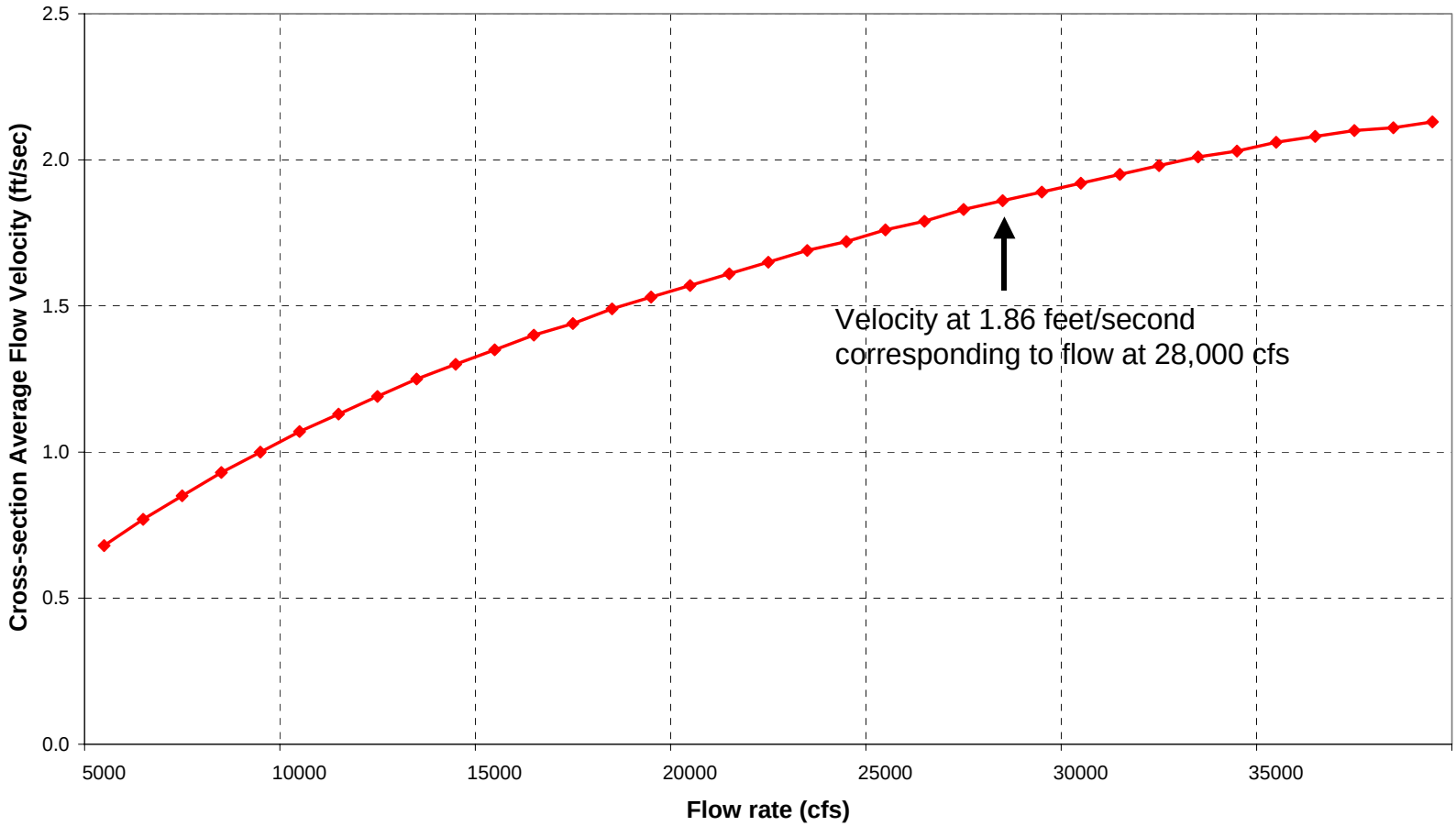


Figure 3.6.1.4.C. Area (acres) of hard substrate inundated to depths of 8.5 to 17.8 ft deep at the two known Gulf sturgeon spawning sites on the Apalachicola River (RM 105 and RM 99) at flows of 5.000 to 50,000 cfs, based on the cross sections located closest to egg collections during 2005 and 2006.

Flow Velocity for the Apalachicola River at Chattahoochee, Florida
(HEC-RAS simulation with 1994 cross section and 2002 rating curve by USGS)



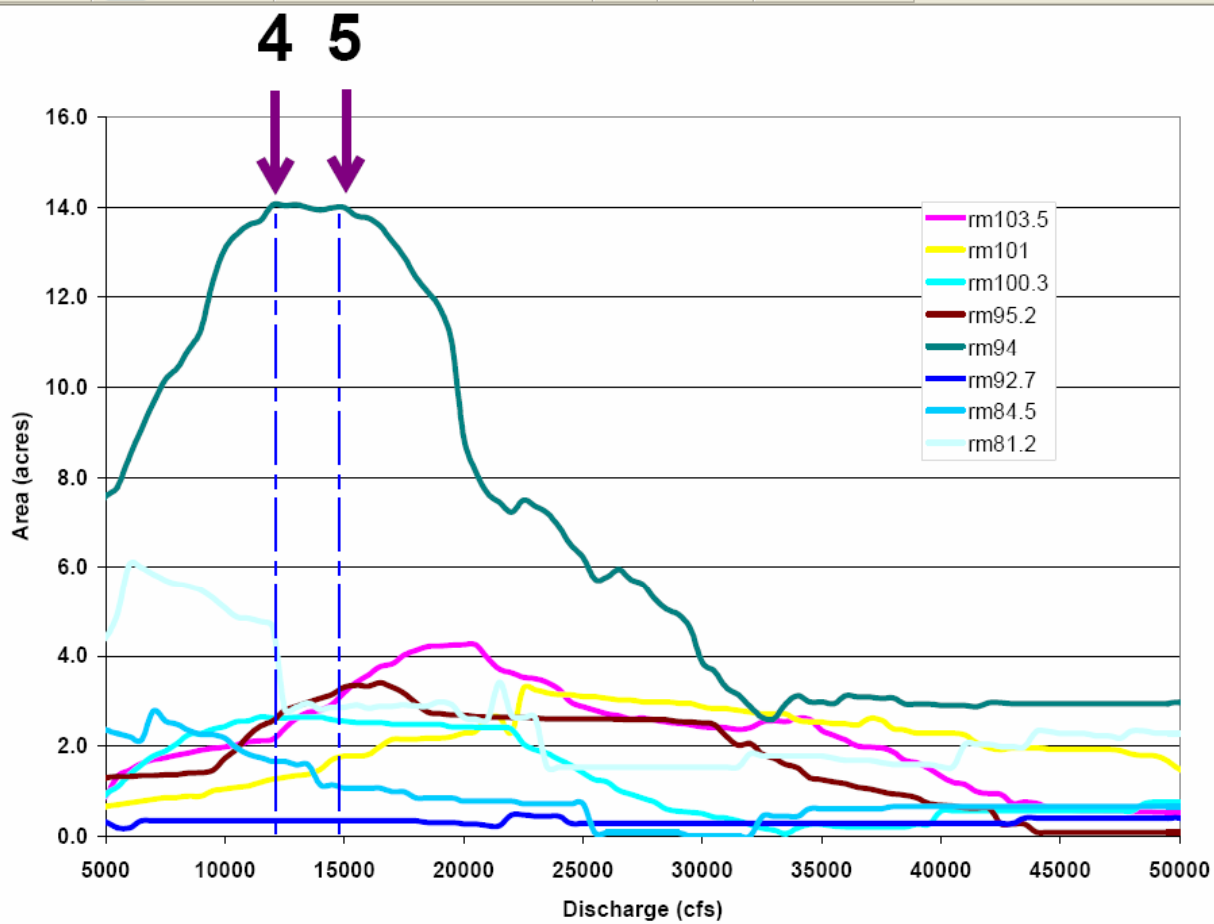


Figure 3.6.1.4.D. Area (acres) of hard substrate inundated to depths of 8.5 to 17.8 ft deep at eight potential Gulf sturgeon spawning sites on the Apalachicola River (river mile [RM] shown) at flows of 5.000 to 50,000 cfs, based on all cross sections measured at these sites.

Conclusions

- Abolish the 37,400 cfs flow threshold. It is based on partial data, unsustainably high, counterproductive, and detrimental to sturgeon habitat availability.
- In the spawning season, to the extent permitted by Basin Inflow, maintain the most conservative flow level that provides sturgeon with substantial available habitat.

Conclusions (continued)

- To the extent safety permits and practically possible, avoid release in the range 27,000 cfs to 38,000 cfs. Flow in this range is counter-productive in achieving available sturgeon spawning habitat.

Suggestions

- USFWS to share its analyzing tools with States so other alternatives can be compared to the IOP (relating to Figs. 4.2.3.A and 4.2.3.B).
- USFWS to provide data supporting Figs. 3.6.1.4.C and 3.6.1.4.D, so States can conduct their own analysis.